

Louisiana Standards Forum

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Part #3

Louisiana Public Water Systems

- 1,378 Public Water Systems in the State
 - 1,033 systems serve communities
 - 345 systems serve non-communities
 - 1,278 systems use ground water
 - 100 systems use surface water

Population served	Community	Non-community
> 100,000	7	0
50,000 - 99,999	8	0
10,000 – 49,999	52	0
500 – 9,999	563	75
< 500	403	270

Treatment Type	Number of Systems
Chloramines	85
Chlorine Gas	629
Chlorine liquid	643
Chlorine Dioxide	22
Ozone	6
Fluoridation	33
Membranes	4
Proposed UV	3



Louisiana Standards Committee

- Mission – to develop the Louisiana standards to be placed within the State Sanitary Code for water works construction, operation, and maintenance by August 2014.

Committee members represent:

- DHH – OPH (2)
- Louisiana Municipal Association (2)
- Louisiana Rural Water Association (2)
- Police Jury Association of Louisiana (2)
- Louisiana Engineering Society (2)
- Southwest Section of American Water Works Association (2)
- National Association of Water Companies (2)
- Louisiana Section of American Society of Civil Engineers (2)
- Louisiana Environmental Action Network (1)



Louisiana Standards Committee

- Meet monthly to develop construction, operation, and maintenance standards applicable to Louisiana Public Water Supplies. 2012 Ten State Standards will be used as basis.
- Committee meetings are subject to the Louisiana Open Meetings Law and shall be held at DHH headquarters in Baton Rouge.
- Committee meeting information can be found at: www.dhh.la.gov/watercommitte.
- Forums will be held for each of the following Parts to allow for public comment:
 - Part 1 - Submission of Plans
 - Part 2 - General Design
 - Part 3 - Source Development
 - Part 4 - Treatment
 - Part 5 - Chemical Applications
 - Part 6 - Pumping Facilities
 - Part 7 - Finished Water Storage
 - Part 8 - Distribution System Piping and Appurtenances
 - Part 9 - Waste Residuals
 - Part 10 - Backflow Prevention
 - Part 11 - Forward



Part 3 SOURCE DEVELOPMENT

3.0 GENERAL

3.1 SURFACE WATER

- 3.1.1 Quantity
- 3.1.2 Quality
- 3.1.3 Minimum Treatment
- 3.1.4 Structures
- 3.1.5 Zebra Mussel Control
- 3.1.6 Impoundments and reservoirs
- 3.1.7 Security

3.2 GROUNDWATER

- 3.2.1 Quantity
- 3.2.2 Quality
- 3.2.3 Location
- 3.2.4 General Well Construction
- 3.2.5 Testing and Records
- 3.2.6 Aquifer types and construction methods-Special Conditions
- 3.2.7 Well Pumps, discharge piping and appurtenances



Part 4 TREATMENT

4.0 GENERAL

4.1 MICROSCREENING

- 4.1.1 Design
- 2.8.2 Physical facilities

4.2 CLARIFICATION

- 4.2.1 Presedimentation
- 4.2.2 Coagulation
- 4.2.3 Flocculation
- 4.2.4 Sedimentation
- 4.2.5 Solids contact unit
- 4.2.6 Tube or plate settlers
- 4.2.7 High rate clarification processes

4.3 FILTRATION

- 4.3.1 Rapid rate gravity filters
- 4.3.2 Rapid rate pressure filters

- 4.3.3 Diatomaceous earth filtration
- 4.3.4 Slow sand filters
- 4.3.5 Direct Filtration
- 4.3.6 Deep bed rapid rate gravity filters
- 4.3.7 Biologically Active Filters



Part 4 TREATMENT cont.

4.4 DISINFECTION

- 4.4.1 Chlorination equipment
- 4.4.2 Contact time and point of application
- 4.4.3 Residual chlorine
- 4.4.4 Testing Equipment
- 4.4.5 Chlorinator piping
- 4.4.6 Housing
- 4.4.7 Ozone
- 4.4.8 Chlorine Dioxide
- 4.4.9 Ultra violet light
- 4.4.10 Other disinfecting agents

4.5 SOFTENING

- 4.5.1 Lime or lime-soda process
- 4.5.2 Cation exchange process
- 4.5.3 Water quality test equipment

4.6 ANION EXCHANGE TREATMENT

- 4.6.1 Pre-treatment requirements
- 4.6.2 Design
- 4.6.3 Exchange capacity
- 4.6.4 Number of Units
- 4.6.5 Type of Media
- 4.6.6 Flow Rates
- 4.6.7 Freeboard
- 4.6.8 Miscellaneous Appurtenances
- 4.6.9 Cross Connection Control
- 4.6.10 Construction materials
- 4.6.11 Housing
- 4.6.12 Preconditioning of the media
- 4.6.13 Waste Disposal
- 4.6.14 Water quality test equipment



Part 4 TREATMENT cont.

4.7 AERATION

- 4.7.1 Natural draft aeration
- 4.7.2 Forced or induced draft aeration
- 4.7.3 Spray aeration
- 4.7.4 Pressure aeration
- 4.7.5 Packed tower aeration
- 4.7.6 Other methods of aeration
- 4.7.7 Protection of aerators
- 4.7.8 Disinfection
- 4.7.9 Bypass
- 4.7.10 Corrosion control
- 4.7.11 Quality control
- 4.7.12 Redundancy

4.8 IRON AND MANGANESE CONTROL

- 4.8.1 Removal by oxidation, detention, and filtration
- 4.8.2 Removal by the lime-soda softening process
- 4.8.3 removal by manganese coated media filtration
- 4.8.4 Removal by ion exchange
- 4.8.5 Biological removal
- 4.8.6 Sequestration by polyphosphates
- 4.8.7 Sequestration by sodium silicates
- 4.8.8 Sampling taps
- 4.8.9 Testing equipment shall be provided for all plants



Part 4 TREATMENT cont.

4.9 STABILIZATION

- 4.9.1 Carbon dioxide addition
- 4.9.2 Acid addition
- 4.9.3 Phosphates
- 4.9.4 “Split treatment”
- 4.9.5 Alkali feed
- 4.9.6 Carbon dioxide reduction by aeration
- 4.9.7 Other treatment
- 4.9.8 Water unstable due to biochemical action in distribution system
- 4.9.9 Control

4.10 TASTE AND ODOR CONTROL

- 4.10.1 Flexibility
- 4.10.2 Chlorination
- 4.10.3 Chlorine Dioxide
- 4.10.4 Powdered activated carbon
- 4.10.5 Granular activated carbon
- 4.10.6 Copper sulfate and other copper compounds
- 4.10.7 Aeration
- 4.10.8 Potassium permanganate
- 4.10.9 Ozone
- 4.10.10 Other methods



Provide Comments

- **3.0 General**
- Comment: strike “to the satisfaction of the reviewing authority” from the first sentence – considered too open ended without definition.



Comments

- **3.1 Surface Water**
- **A source water protection plan enacted for continued protection of the watershed from potential sources of contamination shall be provided as determined by the reviewing authority.**
- Comment/Question: is this possible for large waterways that cross state boundaries such as the Mississippi and Pearl rivers?
- Comment: “as determined by reviewing authority” ambiguous, DHH needs should determine how to be documented, approved, frequency
- Comment: delete definition, it is too broad.



Comments

- **3.1.1 Quantity, d**
- Comment: delete, too broad.
- **3.1.2 Quality**
- Comment: in the first paragraph strike “A study shall be made of..” and replace with “An assessment should be made of “, which is more consistent with language in the groundwater source section; who would conduct study, what documented and how often reassessed.
- **3.1.2 Quality (f)**
- Comment: strike “and ice conditions” since not considered a factor in this climate.
- **3.1.3 Minimum Treatment**
- Comment: delete, covered in Part XII of the Louisiana Sanitary Code.



Comments

- **3.1.3 Minimum Treatment (b)**
- Comment: add language to read “The minimum treatment required shall be *as established by USEPA* and the reviewing authority.”
- Comment: Is minimum treatment documented by log removal or more stringent method?
- **3.1.3 Minimum Treatment (c)**
- Comment: surface water filtration already covered under LAC 51:XII.323.A
- Comment: requirements of this subsection should be deleted and replaced with reference to Safe Drinking Water Act.



Comments

- **3.1.4 Structures**
- **3.1.4.1 Design of intake:** strike “c” since it is not applicable in Louisiana.
- **3.1.4.2 Raw water pumping wells shall:**
- **a.** Comment: strike “as required by the reviewing authority”, need to establish minimum elevation
- **b.** Comment: there is a need to define accessible, by foot, vehicle, foot path?
- **e.** Comment: Is it applicable to all sources, define occasional, some plants too difficult to take line out of service and clean. What drives need to clean?



Comments

- **d. be equipped with removable or traveling screens before the pump suction well**
- Comment: If a remote intake is screened then a mechanical travelling screen as the raw water pumping well is not necessary.
- **3.1.4.3 Off-steam raw water storage reservoir**
- Comment: delete and utilize definition in Part XII Louisiana Sanitary Code.



Comments

- **3.1.5 Zebra Mussel Control**
- **a. chemical treatment shall be in accordance with Chapter 5 of the Recommended Standards for Water Works and shall be acceptable to the reviewing authority;**
- Comment: strike language “Chapter 5 of the Recommended Standards for Water Works” and replace with Title 51, Part XII of the Louisiana Sanitary Code.
- Comment: zebra mussel treatment not the same in some cases; intake can affect cooling water as well as drinking water systems.



Comments

- **b. plant safety items, including but not limited to ventilation, operator protective equipment, eyewashes/showers, cross connection control, etc. shall be provided;**
- Comment: Strike “plant” and replace with “facility”.



Comments

- **3.1.6 Impoundments and reservoirs**
- **3.1.6.1 Site preparation**
- **abandonment of all wells which will be inundated, in accordance with requirements of the reviewing authority**
- Comment: add “appropriate” before “reviewing authority”; also this may require LDEQ and/or DNR review for abandonment.



Comments

- **3.1.6.2 Construction**
- Comment: delete in entirety.
- **3.1.6.3 Water Supply Dams**
- Comment: delete in entirety.
- **3.1.7 Security**
- Comment: strike all and reference para 315 of the Sanitary Code for security requirements.



Comments

- **3.2 Groundwater**
- Comment: delete definition and utilize definition in Part XII Louisiana Sanitary Code.
- **3.2.1.1 Source capacity**
- Comment: delete “unless otherwise specified by reviewing authority”.
- **3.2.1.2 Number of sources**
- **A minimum of two sources of groundwater shall be provided, unless otherwise specified by the reviewing authority. Consideration should be given to locating redundant sources in different aquifers or different locations of an aquifer.**
- Comments: need for a grandfather clause for existing single source systems; strike “shall” and insert “should”; small systems cannot justify two sources; insert language requiring two sources if financially feasible.



Comments

- **3.2.1.3 Standby power**
- **To ensure continuous service when the primary power has been interrupted, a standby power supply shall be provided through a dedicated portable or in-place auxiliary power of adequate supply and connectivity.**
- Comments: add “to meet the average day demand” at end of sentence; generator plan with dedicated generators should suffice to meet requirement; delete “through a dedicated portable or in-place auxiliary power of adequate supply and connectivity”; if a non-transient non-community well will there be a variance process?



Comments

- **3.2.2 Quality**
- Comment: delete, relevant portions covered in Part XII of Louisiana Sanitary Code.
- **3.2.3 Location**
- **3.2.3.1 Well location**
- Comment: delete all and refer to LA Sanitary Code Part XII, sub-part 327.1-5.
- **3.2.3.2 Continued sanitary protection**
- Comment: last sentence delete “may” and insert “shall (re sub-part 315 of Sanitary Code)”.



Comments

- **3.2.3.3 Wellhead protection**
- Comment: delete “as determined by the reviewing authority” and establish wellhead protection plan minimum requirements.
- **3.2.4 General well construction**
- Comment: delete section since covered in Part XII and add reference to Louisiana Water Well Rules, Regulations and Standards.
- **3.2.4.2 Minimum protected depths**
- Comment: delete entirely and refer LA Sanitary Code Part XII, sub-part 327.6 and 7.



Comments

- **3.2.4.4 Permanent steel casing pipe, a-f**
- Comment: delete entirely and refer to Section 2.4.0.0 of the Louisiana Water Well Rules, Regulations and Standards.
- **3.2.4.5 Polyvinyl chloride plastic (PVC) well casing**
- Comment: delete and refer to Section 2.4.0.0 of the Louisiana Water Well Rules, Regulations and Standards.



Comments

- **3.2.4.8 Screens**
- Comment: delete and refer to Section 2.5.0.0 of the Louisiana Water Well Rules, Regulations and Standards
- **3.2.4.9 Grouting requirements, a-f**
- Comment: delete and refer to Section 2.6.0.0 of the Louisiana Water Well Rules, Regulations and Standards



Comments

- **3.2.4.10 Upper terminal well construction, a and d:**
- Comment: delete “a” and refer to LA Sanitary Code Part XII subpart 327.7.
- Comment: delete “or as the reviewing authority directs” since that is too open ended.
- **3.2.4.11 Development**
- Comment: delete and refer to Section 2.7.0.0 of the Louisiana Water Well Rules, Regulations and Standards.



Comments

- **3.2.4.14 Well abandonment**
- Comment: delete and refer to Chapter III of the Louisiana Water Well Rules, Regulations and Standards.
- **3.2.5 Testing and records**
- Comment: good practice but does it belong in this document.
- **3.2.5.1 Yield and drawdown tests, h**
- Comment: “at the discretion of the reviewing authority is vague, what additional testing may be required?”



Comments

- **3.2.5.2 Plumbness and alignment requirements**
- Comment: delete and refer to Section 2.3.2.0 of the Louisiana Water Well Rules, Regulations and Standards.
- **3.2.6 Aquifer types and construction methods – Special conditions**
- Comment: potential for conflict since already mentioned in Part XII with a reference to Louisiana Water Well Rules, Regulations and Standards.
- **3.2.6.2 Gravel Pack Material, b:**
- Comment: delete and refer to Louisiana Water Well Rules, Regulations and Standards.



Comments

- **3.2.6.6 Naturally flowing wells, a**
- Comment: “shall require special consideration”, there is a need to delineate what special considerations will be required.
- **3.2.7 Well pumps, discharge piping and appurtenances, c**
- Comment: relevant portions covered in Part XII; delete ANSI/NSF requirement for lubricants.



Comments

- **3.2.7.6 Casing Vent**
- Comment: delete and refer to Section 2.8.1.0 of the Louisiana Water Well Rules, Regulations and Standards.

